

Integrating seismic stratigraphy and well logging data in defining Dead Sea palaeoclimate changes since the Pleistocene

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Variability of stratigraphic sequences since the Pleistocene in the Dead Sea basin were investigate using interpretation of new 2D high-resolution seismic reflection profiles and downhole logging results. Four sequences (labeled 1-4) were tied to age dated sediment from the ICDP (International Continental Drilling Project) core. These provided chronological information on fluctuations in environmental conditions in the Dead Sea basin as well as on their geological context. Petrophysical data point to major base-level changes since the last 250 kyrs validating significant environmental changes. Long duration wet periods are marked by positive values of natural γ -radiation and continuous deposition of deep lacustrine sediment facies are recognized in the core. Major erosional surfaces and lagunal to evaporites facies were interpreted as dry events following lake level fall. Evaporite-rich stages and erosional unconformities were used as indicator of past lake levels in the Dead Sea basin and suggest a reduction in water inflow with complete desiccation. Lake level falls appears to correlate with major climatic events over the Levant region.